REMARKS

This application has been reviewed in light of the Office Action dated June 18, 2004. Claims 1-33 are pending in this application. Claims 1, 2, and 10-33 have been amended to define still more clearly what Applicant regards as his invention, in terms that distinguish over the art of record. Claims 1, 10, 12, 14, 17-19, 22-24, 27-29, 32, and 33 are in independent form. Favorable reconsideration is requested.

The Office Action objected under 37 C.F.R. § 1.98(a)(1) to the Information Disclosure Statement (IDS) that was filed in the Patent Office on August 7, 2001. The Examiner asserted that the IDS did not include a copy of the form PTO-1449 and stated that the information cited in the IDS has been placed in the file, but has not been considered. Initially, Applicant respectfully notes that Section 1.98(a)(1) does not require that a form PTO-1449 be submitted with an IDS. In addition, MPEP, § 609 states: "If a U.S. patent application number is listed on a PTO-1449 or PTO/SB/08A and O8B form or its equivalent and the examiner considers the information and initials the form, the application number will be printed on the patent. Applicants may wish to list U.S. patent application numbers on other than a form PTO-1449 or PTO/SB/08A and 08B format to avoid the application numbers of pending applications being published on the patent." (Emphasis added.) Thus, Applicant acted entirely correctly in not submitting a form PTO-1449, and respectfully requests that the Examiner consider these references.

The Office Action rejected Claims 1-33 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,867,602 (Zandi et al.). Applicant respectfully traverses this rejection.

Applicant submits that amended independent Claims 1, 10, 12, 14, 17-19, 22-24, 27-29, 32, and 33, together with the remaining claims dependent thereon, are patentably distinct from the Zandi et al. at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is a coding device for encoding image data that includes a transforming means for performing discrete wavelet transformation on inputted image data, to generate transformation factors of a plurality of frequency sub-bands. A coding means entropy-codes each of the sub-bands and generates entropy-coded data for each of the sub-bands, and a generating means monitors the amount of entropy-coded data of a predetermined sub-band in each sub-band. If the amount exceeds a predetermined code length, the generating means removes coded data from entropy-coded data of the predetermined sub-band, while if the amount does not reach a predetermined code length, adds dummy data to the coded data of the predetermined sub-band, thus generating fixed length coded data of the predetermined code length. According to Claim 1, the predetermined sub-band includes at least a lowest frequency sub-band, the generating means generates at least fixed length coded data for the lowest frequency sub-band.

Among other important features of Claim 1 is fixing the length of entropy-coded data of a predetermined sub-band, which includes at least a lowest frequency sub-band ("LL" sub-band) of a plurality of sub-bands generated by performing discrete wavelet transformation on inputted image data.

Zandi et al., as understood by Applicant, relates to a reversible wavelet transform and embedded code stream manipulation and discusses encoding frequency sub-bands. The Examiner states in the Office Action at page 3 that Zandi et al. discloses ". . . fixed length coded data of said predetermined code length" (citing col. 35, lines 5-15) and ". . . making its coded data to be fixed length data" (citing col. 36, lines 5-10). Applicant submits that these sections discuss "huffman [sic] coding", which fixes a relation between input value and output code. Huffman coding, which is well known in the art, is a variable coding method. Applicant submits, however, that nothing has been found in these sections, or any other sections of Zandi et al., that would teach or suggest fixing, by

-18-

removing and adding dummy data, the length of entropy-coded data of the predetermined sub-band including the lowest frequency sub-band as recited in connection with Claim 1.

Accordingly, Applicant submits that at least for this reason, Claim 1 is patentable over Zandi et al.

Claims 10, 12, 14, 17, and 18 include the same feature of fixing the length of entropy-coded data of a predetermined sub-band as recited in Claim 1 and therefore are allowable for at least the same reasons as discussed above in Claim 1.

The aspect of the present invention set forth in Claim 19 is an image playing-back method of decoding/playing-back according to 1- to n-fold playback speeds each frame of image entropy-coded data obtained by dividing image data of each frame constituting a motion image into frequency sub-bands and encoding the same so that the entropy-coded data of predetermined sub-bands of the frequency sub-bands are of fixed length. At least one of the fixed-length entropy-coded data is decoded as an object to be decoded, and is played back as image(s) of frame(s) to be decoded, in accordance with the playback speed. The predetermined sub-band includes at least a lowest frequency sub-band, and the length of entropy-coded of the lowest frequency sub-band for each frame is fixed.

Among other important features of Claim 19 are entropy-coded frames, each of which includes entropy-coded data obtained by dividing image data of each frame constituting a motion image into frequency sub-bands and encoding the same so that the entropy-coded data of predetermined sub-bands, which includes at least a lowest frequency sub-band, of the frequency sub-bands are of a fixed length.

Zandi at al. merely discusses a technique for coding image data at fixed probability and coding using fixed Huffman code. However, Applicant submits that nothing has been found in Zandi et al. that would teach or suggest fixing the length of coded data of a sub-band including a lowest frequency sub-band and playing-back such coded data.

Accordingly, Applicant submits that at least for this reason, Claim 19 is patentable over Zandi et al.

Claims 22 and 23 are device and storage medium claims, respectively, that correspond to Claim 19 and are therefore allowable for at least the same reasons as discussed above in relation to Claim 19.

The aspect of the invention set forth in Claim 24 is a coding method of encoding image data of each frame constituting a motion image. The method includes a transforming step, of performing discrete wavelet transformation on inputted image data, thereby generating transformation factors of a plurality of frequency sub-bands, a dividing step, of dividing into code blocks a plurality of frequency sub-bands obtained in the transforming step, and a decomposing step, of forming into bit planes the code blocks obtained in the dividing step, and decomposing each bit plane into three coding passes. The method also includes a coding step, of encoding each coding pass, and distributing the obtained coded data to a plurality of layers, thereby generating coded data having a layer structure, and a code length controlling step, of controlling the coded data of a predetermined layer in each layer so that it takes on a predetermined code length. The predetermined layer includes at least an uppermost layer and the coded data of the uppermost layer is fixed-length coded data.

Among other important features of Claim 24 is fixing the amount of coded data of a predetermined layer including at least an uppermost layer.

Applicant submits that nothing has been found in Zandi et al. that would teach or suggest this feature.

Accordingly, Applicant submits that at least for this reason Claim 24 is patentable over Zandi et al.

Claims 27 and 28 are device and storage medium claims, respectively, that correspond to Claim 24 and are therefore allowable for at least the same reasons as discussed above in relation to Claim 24. In addition, Claims 29, 32, and 33 include the same feature of the predetermined layer including at least an uppermost layer, and the coded data of the uppermost layer being fixed length coded data, as recited in Claim 24, and therefore Claims 29, 32, and 33 are allowable as well.

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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